ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS
FOUNDED 1886

the ILLINOIS ENGINEER

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
FOUNDED 1934

68th ANNUAL MEETING, ROCK ISLAND, MARCH 26, 27, 28, 1953

DRAGLINE, HARMATTAN MINE, DANVILLE, ILLINOIS
(See Page 2)

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Affiliated with the National Society of Professional Engineers

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Of Professional Interest

THE ILLINOIS ENGINEER—THIS MONTH

THE NEW YEAR

Ring out the old, ring in the new—
Ring, happy bells, across the snow:
The year is going, let him go;
Ring out the false, ring in the true.

Ring out the grief that saps the mind,
For those that here we see no more;
Ring out the feud of rich and poor,
Ring in redress to all mankind.

Ring out a slowly dying cause,
And ancient forms of party strife;
Ring in the nobler modes of life,
With sweeter manners, purer laws.

Ring out false pride in place and blood,
The civic slander and the spite;
Ring in the love of truth and right,
Ring in the common love of good.

Ring out old shapes of foul disease,
Ring out the narrowing lust of gold;
Ring out the thousand wars of old,
Ring in the thousand years of peace.

Ring in the valiant man and free,
The larger heart, the kindlier hand;
Ring out the darkness of the land—
Ring in the Christ that is to be.

TENNYSON

SIXTY-EIGHTH ANNUAL MEETING

The Local Committee on Arrangements has been making elaborate arrangements for the 68th Annual Meeting to be held in Rock Island on March 26, 27, and 28, next. Point your plans for attendance now. An interesting program for the ladies is in prospect so plan to take your wife.

Membership on the local committee is as follows: James R. Palmer and Lee Osborn, co-chairmen, and John Fulper, Clifford E. Missman, and James H. Morrow.

ENGINEER'S WEEK—1953

Plan to mark National Engineer's Week, February 22-28, 1953, with a special program at a meeting of your chapter.

Information which will be helpful to you in promoting such programs may be obtained by writing to the National Society of Professional Engineers, 1121 15th Street, N. W., Washington 5, D. C.

PRESIDENT'S MESSAGE

THE ILLINOIS ENGINEER

It has been my good fortune during the past year to have my name included on the mailing lists for the publications of several of the member state societies of N. S. P. E. I have read these magazines with much interest. First, it has been interesting to compare the *Illinois Engineer* with these publications from the standpoint of format. Second, it has been interesting to compare editorial content, and third, I have been very much interested in comparing the advertising each publication contains.

I think we can be exceedingly proud of our *Illinois Engineer*. General appearance, colorful and appealing covers, editorial grouping and physical make-up of our publication are better, in my opinion, than those of any other state society magazine which I have seen. With the exception of our summer issues, the magazine which Editor Bill Oliver publishes each month contains at least as much editorial content as any, and considerably more than most. Moreover, the *Illinois Engineer* has a more diversified content. The papers which are presented are of broader scope than those of other publications which limit themselves largely to Society activities. It seems to me that the policy our Editor follows results in a more readable magazine.

From the standpoint of news coverage, reporting chapter, state and national activities in general, it appears to me as though all of the publications I have seen are doing a fine job. It has been interesting to note that, although no two handle it exactly alike, all publications include full reports of chapter meetings in one form or another.

When it comes to advertising, however, our *Illinois Engineer* does not measure up so well. Other state society magazines contain much more advertising than ours does. If we had one-half the advertising that the New Jersey Society has, for example, our *Illinois Engineer* would be self-supporting, and nearly two dollars of our annual dues could be used to expand other Society ac-

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READ THE ADVERTISEMENTS

SUBSCRIPTION RATES

$2.00 per year in advance to members of the Illinois Society of Professional Engineers. $4.00 per year in advance to non-members in U.S.A. and its possessions, Canada, and Mexico. Foreign $6.00. Single copies 40c.

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tivities. There is a challenge for our Advertising Committee to mull over. If other societies can obtain advertising in what seems to be almost prodigious amounts, why cannot our Society do the same? Stop a moment and consider some of the work an organization such as ours could undertake if we could budget three or four thousand dollars annually over and above our present budget!

Think of what our Membership Committee could do if there were some extra funds available, or our Educational Committee, or our Legislative Committees . . .! Every dollar that we can spend in advancing our professional activities adds to the stature of the profession, and that, in the final analysis, is the primary function of our Society. So, gentlemen, let us examine this matter of advertising again, for we can be doing not only our magazine, but our entire Society, a service if we can increase our advertising to the point where it underwrites most or all of our publishing expense. Does your office carry a professional card, or does your company advertise its product in the pages of the *Illinois Engineer*? If not, why not?

A. D. SPICER
President, I.S.P.E.

President's Datebook

Dec. 6—Journeyed this day to Society Headquarters in Champaign where Budget and Executive Committees did meet jointly to mull over financial and other problems. Affairs took most of the day, but managed to start homeward in time to enjoy magnificent winter sunset from behind westward facing car wheel.

Dec. 12—Met "Skeet" in Kewanee, traveled to Rock Island where did dine in congenial company of West Central Chapter Convention Committee. Laid extensive preliminary plans for annual meeting.

Dec. 16—Invitation to Rockford Chapter meeting accepted for this night, excellent dinner at Elks Club, large percentage of members in attendance and unlimited hospitality. Discussed unity and professional responsibility at length and didn't start long return trip until past bedtime. Fought sleep all of the last seventy-five miles.

Dec. 18—Attended home chapter Ladies' Night meeting to greet Secretary and Mrs. Babbitt and to thoroughly enjoy illustrated discussion of their European trip of last summer. Fascinating lecture by a master lecturer—don't miss it if you ever have a chance to hear it!

Dec. 19—Despaired of arriving in Effingham over combination of ice, rain and fog, but managed to check into hotel in ample time to travel on with Ambraw Chapter President Walters to Newton American Legion Hall where Ladies' Auxiliary of Legion did themselves proud with turkey and trimmin's. Discoursed on a variety of matters concerning profession and Society, and back to Effingham before midnight. More rain and fog on return trip next day, but found northern highways cleared of ice.

COVER PICTURE

The cover picture on this issue of the *Illinois Engineer* was taken by Professor C. D. Greffe, Mechanical Engineering Department, University of Illinois. The photograph was exhibited at the 5th Annual Central Illinois Camera Club's Association Salon during the fall and attracted considerable attention because of its interesting composition. It is obviously of interest to engineers.

The picture shows the boom of the dragline used to strip the overburden in the open mine operations at the Harmattan mine near Danville, Illinois. The boom has a length of 180 feet with a dumping radius of 174 feet. The capacity of the bucket is 25 cubic yards. The mine produces about 750,000 tons of coal per year with an estimated life of between 15 and 20 years.

ROCK RIVER CHAPTER SALUTES A. W. BROWN

Prepared by W. E. GRONBERG

The Rock River Chapter of the Illinois Society of Professional Engineers will love a valuable and well-respected member when Mr. A. W. Brown, better known as Archie Brown in Dixon and Northern Illinois, moves to Phoenix, Arizona in late January.

Archie was a very successful president of the chapter in 1948, and an active member since 1939. His cheerful and enthusiastic work, always seasoned with his sound common sense, has contributed much to the chapter work.

He came to Dixon in the fall of 1936 with the Illinois Northern Utilities Company in the distribution engineering office. He advanced to Assistant Distribution Engineer under the late Mr. H. C. Bartholomew, succeeding to Distribution Engineer in 1949. Later he became Division Engineer after the merger with the Public Service Company of Northern Illinois.

In Phoenix he will be half of a partnership with Mr. P. J. McNaughton, handling the electrical end of a consulting engineering organization. His business address will be 650 North First Avenue, Phoenix, Arizona.

Archie has been active in several other organized activities in Dixon, among them the Toastmaster's Club, Dance Club, and the Foreign Travel Club.

The Illinois Society of Professional Engineers will miss Archie, and regrets that he prefers to swap the beauties of Northern Illinois for sunny Arizona and to abandon his snow shovels and tire chains.

Here's luck to him and his family.

VOX SECRETARII

P. E. ROBERTS, Assistant Secretary

(Postmarked, Miami, Fla., 12-24-52)

Having a wonderful vacation. Plenty of people to see and things to do.

Best Wishes for a Happy and Prosperous New Year to I. S. P. E.

COST OF LIVING INDEX

The correction factor to be applied to the I. S. P. E. Schedule of Minimum Fees and Salaries was 191.6 for November, 1952. The factor is based upon the U. S. Department of Labor's most recent Consumer Price Index.

WOOD RIVER HIGH SCHOOL FORMS JUNIOR ENGINEER UNIT

(From a Wood River Newspaper)

The nation's critical shortage of engineers has prompted head of the science department at East Alton-Wood River Community High School to organize a unit of Junior Engineers of America, the first of its kind in the United States.

Howard Oetting, who has been associated with the department at the school since September, 1935, is initiating the movement hoping for success which might spread to schools throughout the country.

Of approximately 200 June, 1953, graduates at the local school, only 11 are potential engineers, having carried four years of mathematics and three of science, physics or chemistry.

"The all-over picture in our nation is not good," Oetting said. "Recent statistics show Russia has five times as many engineers as the United States. The National Association of Manufacturers, engineering schools and our government are very much concerned about the lack of trained engineers and engineering students."

Members of the group at this time are Dana Mead, chief engineer; Jack Greenshields, assistant chief engineer; Delores Baird, recording engineer; Jerry Burnam, Robert Deem, Jim Hord, Don Hunt, Robert Sanders, Robert Stetson, Jim Schmuch and Phillip Voorhees.

I hold every man a debtor to his profession; from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves by way of amends to be a help and ornament thereunto.

Sir Francis Bacon

The best job-insurance is work well done.

No one ever succeeded in accomplishing anything he failed to start. — Ruth Smeltzer.

P. C. A. ILLINOIS OFFICE IN NEW LOCATION

The Chicago District Office of the Portland Cement Association will operate from new quarters in the Chicago Title and Trust Building, 111 W. Washington St., in Chicago effective December 22, 1952, according to an announcement today by W. W. Wallace, District Engineer.

All P. C. A. activities in Illinois will be handled through this office, which for many years has served cement and concrete users in Illinois from 33 W. Grand Ave., Chicago, location of the headquarters building of the Association which is a national organization to improve and extend the uses of portland cement and concrete.

68th Annual Meeting

March 26, 27 and 28, 1953

Fort Armstrong Hotel
Rock Island, Illinois

DEALERS BOOST SAFETY

More than 6,000 automobiles, valued at 12 million dollars, were provided to high schools by new car dealers for driver education programs during the past year.

And the investment is paying off in terms of safer and more competent driving by the nation's teen-agers.

Recent sampling studies in several states indicate that the accident rate among student drivers who have been trained is almost 50 per cent lower than that of teen-agers who have received little or no driver instruction.

Last year, about one out of every four eligible high school students in the country was enrolled in both classroom and practice driving courses. Enrollment totaled nearly 335,000.

By providing training cars, dealers have helped to solve one of the major problems faced by schools seeking to supplement class work with practical behind-the-wheel training.

INVENTOR'S DELIGHT

The motor vehicle has been a great source of inspiration for America's inventive minds during the past half century.

Patent authorities estimate that one-sixth of all patents granted by the U. S. Patent Office have been for automotive inventions.

This ratio was even higher in the early days. The total number of automotive patents granted to date is close to 500,000.

About 85 per cent of these were issued to individual inventors and small firms. The others went to major vehicle manufacturers and large firms engaged in parts-making.

Since patents expire after 17 years, about 350,000 automotive inventions are now public property.

DECATUR ENGINEERING FIRM MANUFACTURES IRON PRODUCTS

Ornamental Metalworks Company's Vice-President Carl W. Grothe, left, and Partner and President Russell M. Gordon are pictured above looking over a model of a roof truss which was fabricated on a 100-foot jig in the rear of the factory.

The Company was founded in 1934 with Russell M. Gordon's $75.00 and the tools in the car of Plant Superintendent David M. Constant, and has grown to a present employment of 45 men and a 1951 payroll of $121,563.

Both Mr. Grothe and Mr. Gordon are members of the Society.

Engineering In A Free World

ERIC JOHNSTON, *Chairman of the International Development Board*

(Presented before the N. S. P. E. Centennial of Engineering Banquet, September 5, 1952)

EDITOR'S NOTE: *Eric Johnston has been a national figure for many years. He served as captain of the Marine Corps in World War I. After the war in 1923 he organized the Brown-Johnston Co., an electrical retail business and has been interested in the electrical industry ever since. He has served in many civic and business activities, both local and national, becoming president of the Chamber of Commerce of the United States in 1947. At present Mr. Johnston, as is indicated above, is Chairman of the International Development Advisory Board, whose primary function is in the implementation of the Point 4 Program.*

Mr. Johnston's paper has not been published elsewhere and we are proud to present it to the I.S.P.E. in the ILLINOIS ENGINEER.

It is a particular pleasure for me to be here today because, by collateral lineage, I think I am a member of the family. Back in 1922, after a spell in the Marines, I took to selling, and then to making electrical appliances. That led to the business of electrical engineering, in which I am still very much involved.

So I feel at home among you — if not as a blood brother, at least as a first cousin. It would be pleasant to spend some time swapping family yarns with you—and after 25 years of association with engineers of all kinds, I believe I know some yarns worth swapping. But on this occasion, I have a mission to perform.

We live today, as you know, in a politically bi-polar world—a world divided and torn between two fundamentally conflicting theories of social and economic organization. Whatever hope we may have entertained that World War II would give us universal peace has been dashed on the rocks of our experience since then. However tenaciously we may still cling to the hope of a unified world in the future; however patiently we may strive to realize it, the fact remains that in this decade of the 20th century, the world is locked in a titanic struggle between the forces of imperialistic Communism at one extreme and the forces of democratic Capitalism at the other.

Whether we like it or not, the United States has emerged from the cataclysm of two wars in one generation as the main protagonist of the theory of Capitalism. At the opposite pole, stands the Soviet Union and Communism.

This is the ultimate, perhaps, in over-simplification. One could spend hours defining the complexities of the conflict which wracks our world and constantly endangers peace. One could write volumes exploring the vast chasm of difference which makes the two systems utterly irreconcilable. One could define the elements of the conflict in terms of fundamental conceptions of individual freedom, justice, international obligation, morality. But the central fact is that the repercussions of this collision of ideas touch you and me and every man and woman in the world. In one way or another, the conflict between our system and Communism influences the lives of every one of us, rich or poor, young or old, wherever we may be. In a sense, it is perhaps the most important reality of our time.

It is the dominant consideration which shapes and conditions the pattern of American foreign policy today and determines our conduct in relation to the other nations of the world.

Now if I may construct a simile in the language of your profession, this all boils down to something like this:

The people of the world are seeking a new world design—the design for a lasting edifice of peace founded on principles of greater economic and social equilibrium between nations and men. Two great and powerful firms with completely different theories of social engineering, are bidding for the job. On one hand is the firm of U. S. A. and Associates, which contends that a durable edifice of world peace and prosperity can only be built to specifications of political and economic freedom, equal justice for all, and the integrity of the individual.

On the other hand is the firm of Communism International which promises—no matter how falsely—that a decent world can be built to specifications of dialectic materialism, with specifications of force, suppression and abasement of the individual.

The decision as to which of these designs is finally to be accepted rests ultimately with those peoples of the world who are still free to make a choice.

We have already taken steps—and effective steps, I think—to prevent our competitors from using the tactics of intimidation and force to compel acceptance of their plan. We have done much — but perhaps not enough—to expose and discredit their abortive promises and misleading double talk. But we still have the enormous job of explaining and interpreting our own blueprint to the billion or so of people who, in the end, are going to decide what kind of a world they want to live in.

In other words, we must find the way to explain our conceptions of a decent social order to the billion men and women who live in what we call the less developed areas of the still free world. We must find the way to demonstrate our good will, our honest motives, and our real desire to help them along the road of progress.

There was a day, not long ago, when we felt we could leave this kind of thing to the diplomats. That was the day when we thought of diplomats as suave gentlemen in silk hats, tail coats and striped thousers, who gath-

ered behind locked doors, in gilded conference rooms, on the periphery of acres of green baize, to talk in mysterious terms about international affairs.

If diplomacy ever was like that, it is no longer so. For some years now, to consider only the matter of dress, diplomats have taken more to business suits than to tail coats. And just in the past two years or so, diplomatic attire has taken a sudden and radical turn. In 35 countries of the world today, some of America's ablest diplomats are wearing the most casual costumes: short-sleeved shirts, open at the neck and quite likely to be sweat-stained; khaki or denim trousers, quite likely to be badly out of press; and work shoes, quite likely to be caked with mud. You will forgive me, I know, if I say they look more like engineers than diplomats.

For diplomacy has entered a new dimension. It has moved out of the gilded conference rooms of world capitals and into tents on the deserts of Iraq and Saudi Arabia; into mud-walled villages on the high central plateau of Iran and the plains of India; into cocoa groves along the Kpo River of Liberia and into rice paddies along the Irriwaddy in Burma; into the cold, thin air of the high Andes and the hot, thick atmosphere of the Amazon Basin.

In his new dimension, the diplomat is less at home in a drawing room than in a field or farmyard. He takes less pleasure from the marble fountain in a formal garden than from the sinking of a tubewell or the filling of an irrigation ditch. The map he pores over shows not the area of a boundary dispute but the track of an invasion of locusts. His dispatch case, instead of *aides memoires*, carries charts on a minerals survey, or engineering plans for a power project, or blueprints for a new factory.

Diplomacy's new dimension is, of course, the Point 4 program. Its objective is to help half the people of the human race to get off their knees by their own efforts, using their own resources. Its method is to help people to help themselves by spreading on a mass scale our inexhaustible and growing store of technical knowledge. Its instruments are skilled men and capital.

I believe the American people feel at ease in this new dimension of diplomacy. There are several good reasons for that. Helping people to help themselves is in the American tradition. Point 4 calls on the skills and energy of Americans in every walk of life. Perhaps more than any other kind of diplomat, the Point 4 technician is representative of his own way of life. Certainly he gets closer to the people of other lands, and while he may stumble over protocol, yet he is in step with history.

For if we had not launched Point 4 in June, 1950, under the Act for International Development, we should have to launch it now. If any one of you is inclined to doubt that, I urge him to ponder this statement from the recent report of the President's Materials Policy Commission, headed by William Paley, President of the Columbia Broadcasting System (and I quote):

"By the midpoint of the twentieth century we had entered an era of new relationships between our needs and resources; our national economy had not merely grown up to its resource base, but in many important respects had outgrown it. We had completed our slow transition from a raw materials surplus nation to a raw materials deficit nation."

It now requires something like two and a half billion tons of raw materials to feed the gigantic maw of our industrial colossus, according to the Paley report, and by 1975 it probably will take double that amount. Technology, conservation, development of new domestic sources will help to keep pace with this enormous growing appetite. But they will not be enough.

The sober fact is that we already rely completely on foreign sources for certain essential materials and must seek abroad for an ever-increasing proportion of the essential ingredients of our industrial production.

In other words, gentlemen, the chips are down. As the Materials Policy Commission puts it:

"The hard political facts of the mid-twentieth century add further great weight to the proposition that it will be to the mutual advantage of all freedom-loving peoples of the earth to work toward a greater economic and political cooperation founded on the principles of mutual help and respect.

"Security and economic growth for the United States and the rest of the free world must be the essential aim of any policy worth the name. Materials strength is a prime ingredient of general economic strength and growth, which in turn is the foundation of rising living standards in peace and of miltary strength in war. This Commission is convinced that if the United States and other free nations are to have such strength, they must coordinate their resources to the ends of common growth, common safety and common welfare. In turn, this means that the United States must reject self-sufficiency as a policy and instead adopt the policy of the lowest cost acquisition of materials wherever secure supplies may be found."

Now there is no question that, as a whole, the world has resources sufficient to enable all mankind to enjoy a high standard of living. And there is no question that human knowledge and skill are sufficiently advanced to use the riches of the earth for the general good. But if wisdom dictates what we must do, wisdom dictates also how we must do it. So far I have discussed only the needs of the United States, the needs of some 150 million people. In the still free world, there are roughly 1.4 billion other people whose needs must be considered; nearly 400 million are in those countries we call more developed, over a billion are in those we call less developed.

If you ask me what less developed means, I will tell you it means far short of the potential of productivity and development based on physical and human resources. It means a lag of decades and even of centuries

behind the norms established by ourselves and other more developed nations of the world.

It means that this acre of land which has produced 10 bushels of grain with primitive methods can be made to produce 20 to 30 or 40 with modern techniques and less human effort. It means that this arid valley can support lush farms and that bleak range of mountains can supply the ingredients of heavy industry.

The so-called underdeveloped areas are veritable storehouses of dormant wealth. But the inhabitants of these areas mean to enrich their own lives from their own inheritances. In other words, the fulfillment of our needs is not something we can achieve unilaterally. Our diplomacy from now on must have as its purpose—and as its result — the reaching of mutually advantageous objectives by partnership arrangements carried out by mutual agreement. That is the significance of the new dimension in diplomacy. That is the Point 4 method. It is the only method that will work, now that the peoples of the earth are demanding independence and decent conditions of life.

This means that our problem in the next 25 years is not merely one of acquiring one billion tons of materials from other countries. The problem is to work with other countries so that production rises sufficiently to supply the needs of a population which by 1975 will be approximately two billion, according to best estimates. For the moment I am speaking only of the anticipated population of what is still the free world.

Let us consider this problem of production from an engineering viewpoint. Essentially, the problem is one of building—of building strong, healthy, expanding economies.

What are the elements of a sound economy? What goes into our high standard of living? We began as a nation of farmers. On an agricultural base, we gradually built a tremendous system of industry and communications. Supporting the system of production and distribution are systems of education, research, credit.

Now in the underdeveloped areas we find this situation:

First, widespread hunger. Even with seven out of ten people deriving their livelihood from the land, hunger is a constant problem. The food supply in underdeveloped areas works out to less than 2,000 calories per person per day. The requirement for good health is 2,300 to 2,600.

Second, widespread ill health. Because of malnutrition and disease, the average life span is 35 years or less in underdeveloped areas, compared to 60 or 63 in more developed countries.

Third, widespread ignorance and illiteracy. Seven out of ten people cannot read or write. Not because they lack intelligence or ambition, but because they lack schools and teachers.

Under these conditions, it is not surprising that the underdeveloped areas lack modern industries, well-developed highway systems, power facilities, and the other elements of what we would consider modern economies.

You are engineers. If you are building a skyscraper you do not begin with the 60th floor. You begin with the foundation. Then you erect the structural skeleton. Then the walls and floors, heating and plumbing and electrical and air-conditioning facilities. Like a skyscraper, an economy must have a solid foundation and a strong basic structure.

If seven out of ten people are on the land, it is clear enough that some of them must be moved off the land into other fields of production. This implies industrialization. But it will be futile to turn hungry farmers into hungry factory workers. Or disease-ridden farmers into disease-ridden factory workers. Or illiterate farmers into illiterate factory workers.

Point 4 attacks these basic problems of hunger, disease and ignorance head-on, through skilled Americans working directly with the people of the less developed countries. It undertakes to make available to these people all that we have learned in the process of transforming a wilderness into a modern colossus of material wealth and well-being. And in that way, it attempts to put down the foundations on which a sound and stable economy can be erected.

But Point 4 is more than this—much more. It is the vehicle for a new kind of industrial statesmanship, through which the forces that built America can be employed to help build modern economic structures in countries that still lag centuries behind. It is the projection of our system of private enterprise into global focus, calling into play as instruments of foreign policy the brains and brawn, the imagination and practical experience of our industry. It relies upon industry—upon private enterprise—as its strong right arm.

Too few people realize this in America. Too many people think Point 4 is just another "Government giveaway" program. Too many people think it is global do-gooding. Too few realize that Point 4 depends on the investment of private capital to achieve real economic progress in the countries less fortunate than our own.

It is necessary, of course, to be realistic about this matter of private investment abroad. There are difficulties, obstacles and impediments galore. One of my staff recently made a list of thirty-five deterrents to the flow of American capital abroad, and I daresay his list was incomplete. It included only the main problems—risk of nationalization or expropriation, barriers to exchange convertibility, tax discriminations, and so on. Admittedly, the picture is not a rosy one.

But certainly it is not a hopeless one. Every possible effort is being made by the Government of the United States through various of its agencies, to eliminate these obstables. Treaties of commerce and friendship, for example, are under negotiation with several of the underdeveloped countries. Several others have recently been

signed. The Congress is currently considering legislation designed to eliminate certain tax inequities which have tended to deter companies from operating abroad. Surveys of investment potentials have been made in a number of countries by the Department of Commerce. The investment guarantee provisions of the Mutual Security Act have been extended to cover investment in the Point 4 countries as an insurance against loss through expropriation and certain other risks. In short, all of the facilities of the Government, both here and abroad, are at work to clear the way for the flow of capital on which achievement of higher economic standards throughout the world so heavily depends.

So much for the obstacles. They do exist but we hope many of them can be cleared away. There is still another reason to assume that American investors can and will seek profitable opportunities in the less developed areas. And that reason is the simple fact that many—a surprising number—are already operating there, successfully, profitably and to the benefit of the country concerned.

Since I cannot name them all, I am going to mention none. But the record of what they are doing, and have done for thirty years or more, in Liberia and Venezuela, in India and a dozen other nations of the world, is proof in itself that obstacles in the way of American enterprise abroad are far from insurmountable. It is proof, too, of the immense contribution that American Industry can make to the economic and social development of these lands.

Now time and again I hear it said that there is no use talking to American capital about our moral responsibility toward the less developed countries of the free world. American capital, I am told, is not interested in moral obligations—it is interested only in one thing: profits. But this is only partly true. Our system, to be sure, is a profit system. It lives and breathes on profits. But American industry, it seems to me, has more than once shown its willingness to share the burden of any undertaking we may have found it necessary to assume in the national interest. Industry, I believe, will be sensitive and responsive to the simple fact that the political and economic security of the United States is inextricably bound up with the economic development and political stability of the other nations of the free world. When it is clearly understood, that one fact, I believe, is sufficiently compelling to provide industry with all the incentive it needs.

We might sum it up this way:

a) Here are a billion people who want a greater share in the economic and social advances of our time.

b) In a bi-polar world, these billion people can be a billion friends—or a billion enemies!

c) They are the owners of the raw materials we need to maintain our economy and the economy of the free world.

d) They are a vast potential market for the produce of our industry.

If the incentives must be couched in terms of "enlightened self-interest"—there they are.

Finally, I should like to say something to you as engineers, for it seems to me that your profession has a most significant part to play in the gigantic job ahead of us.

When we talk about economic development of a country, what precisely do we mean? I think we mean the realization of the full potential of that country to achieve a standard of living comparable to the standard of living enjoyed by the people of the more advanced economies. That implies rounded, comprehensive advancement — the reduction of disease and ignorance; enough food for everyone; work in agriculture or industry or trade for all who can work; decent wages, decent conditions of labor. It means not merely increased food production, but processing plants, refrigeration and storage facilities, farm-to-market roads, better retail distribution. It means not merely eradication of endemic diseases, but hospitals and clinics; not merely village classes in reading and writing, but permanent schools and playgrounds; it means power plants and railroads; mines and irrigation systems; modern dwellings, city streets and sewage plants, factories and foundries, refineries and smelters.

Scarcely one of these is possible without engineering skill and know-how. Yours is a fundamental role in the Point 4 undertaking. For many years, of course, American engineering has gone around the world, into many lands and many projects. So there is nothing really new in the idea. Point 4 merely offers a new focus, a new vehicle, a new avenue, as it were, through which the great profession you represent may continue and expand its contribution to world progress.

Your skill and knowledge—your amazing ability, so astounding to the layman—is needed by the people of foreign lands today more than ever before. To the extent that you are able to help them, you will be helping your own country, your own people and yourselves. You will be helping to build the structure of a peaceful, free and democratic world.

That is a mission worthy of your mettle.

FROM THE N. S. P. E. LEGISLATIVE BULLETIN

Other than organization, introduction of bills and other routine operations, the new Congress will not begin to function until after January 20th when General Eisenhower assumes office and begins the flow of messages, recommendations and ideas to Congress. It is uncertain whether the early days of the session will be exceedingly active on legislative items or whether a more gradual tempo will be followed. One camp of the Eisenhower advisers is urging an immediate all-out legislative program, much like the famous "first 100 days" of the

Roosevelt regime; others, however, feel that the new President would be better advised to feel his way in the legislative field.

Whatever approach is taken, it is certain that many of the decisions and actions will be of utmost importance to the engineering profession. Set forth below are the major items of interest to the engineering profession and such indications as are presently available to chart the future course of action.

Exemption of P. E.'s from Salary Controls

The pertinent question regarding continuation of wage and salary controls in 1953 appears to be whether the present controls will be allowed to expire next April 30, as now provided in the Defense Production Act, or whether the President or Congress will terminate them before that date. Barring some unforeseen crisis, it is generally agreed that the controls will not be extended past next April. At the present writing the Wage Stabilization Board has, in fact, become inoperative, or at least ineffectual, as the result of President Truman's decision in the Coal Case, approving the wage increase for the miners over the objections of the Board, which led to the resignation of the Board's chairman and the Industry members.

The present law exempts the wages and salaries of professional engineers employed in a professional capacity from federal control as a result of the Bricker amendment secured earlier this year by N. S. P. E. Whether this exemption would be continued should the control act be extended is not at all certain, especially in view of the fact that Senator Homer E. Capehart (R., Ind.), slated to be the chairman of the Senate Banking Committee, was one of the opponents of the P. E. exemption when the Bricker amendment was debated on the Senate floor. Senator Capehart has announced that he will hold early hearings on the matter of continuing the controls, probably starting in the first part of February. Representative Jesse P. Wolcott (R., Mich.), who will head the House committee having jurisdiction over control legislation, has stated that he sees no justification for continuing price and wage controls and indicated he believes the attitude of General Eisenhower is that it would be better to rely on indirect controls.

Efforts of heterogeneous unions to have the Wage Stabilization board adopt a broader definition of tthe P. E. exemption than that issued by the Salary Stabilization Board (see August, 1952 issue, American Engineer) have failed. The WSB, which has jurisdiction for employees represented by collective bargaining groups, has adopted the same regulation as the SSB which limits the exemption to engineers only. The union groups had attempted to convince the WSB that the exemption should also be applied to technicians, physicists, chemists, etc. The WSB regulation recognizes, as does the SSB regulation, that registration is sufficient to prove qualification as a professional engineer.

Renegotiation of Defense Contracts

Many engineers and engineering firms in private practice are being affected by the Renegotiation Act of 1951 as a result of defense contracts for engineering services. The subject matter of this law is complex and not susceptible to simple analysis in its effects on such contracts but certain *general provisions which have a direct bearing on engineering services* may be noted.

For those unfamiliar with renegotiation as practiced during and after World War II, it may be stated that the general philosophy behind it is that no one should benefit unduly from war business. Therefore, the *purpose of the law is to "recapture" excessive profits* which may flow from defense work. While a complex formula is used to determine the existence of "excessive" profits, and the results vary on a case-by-case basis the general principles and factors used in determining excessive profits may be noted. Among the more important of these principles are: the effect of federal income taxes on retained profits are not considered; separate consideration is given to different types of contracts; comparisons are made with prices, costs and profits of other contractors engaged in the same type of endeavor; consideration is given to prior renegotiation settlement, but it is not controlling; efficiency of the contractor is considered; reasonableness of costs and profits is an important element; the capital employed for the work is considered, along with the extent of risk assumed, the contribution to the defense effort, and the character of the business.

Renegotiation applies both to prime contracts and to subcontracts but some contracts are exempted by the law and others are exempted by administrative action of the Renegotiation Board. Among the major mandatory exemptions are: certain agricultural commodities and raw materials, common carriers and public utilities, tax-exempt institutions, and contracts that do not have a direct and immediate connection with the national defense.

One of the exemptions under the discretionary powers of the Board of particular interest to engineers is "All prime contracts with natural persons (not partnerships, joint ventures or corporations) entered into under authority of any law. which call for the performance of services, whether personal or professional, by the individual contractor in person under the supervision of the Government, and which are paid for on a time basis." *Another important exemption relates to subcontracts for architectural, design or engineering services,* no part of which services are or were related to the effecting or procuring of a contract with a government department or a subcontract, if the aggregate amount received or accrued during a fiscal year by a subcontractor and all persons under control of or controlling or under common control with the subcontractor, is not more than $250,000. The figure cited in this connection is significant because the minimum receipts normally bringing the contractor

within renegotiation jurisdiction is $25,000 in a fiscal year. A simple statement of this latter provision is that an engineering firm which renders service strictly on the basis of providing expert advice on engineering questions, and without regard to securing a contract is entitled to be considered under the $250,000 exclusion; whereas an engineering firm engaged in practice as sales engineers, or receives compensation based on securing a contract, comes under the $25,000 exclusion.

Each person or firm holding contracts or subcontracts subject to the act *must file a financial statement on or before the first day of the fourth calendar month following the close of the fiscal year.* This report is due without notice from the Renegotiation Board. The regulations state that no *special form is prescribed for construction contractors, architects and engineers.* Such contractors are to adapt the Standard Form of Contractor's Report to their particular needs.

Copies of the form to be used may be obtained by writing to The Renegotiation Board, Washington 25, D. C. The Board has created four regional Boards located in Washington, D. C.; New York City; Chicago; and Los Angeles. These regional Boards will conduct the actual renegotiation proceedings, but in cases showing profits of more than $400,000 the regional Boards may only make recommendations to the parent Board. In all cases provision is made for an appeal to the Tax Court.

These few paragraphs should not be considered as a detailed report on an important and highly technical subject. Those *engineering contractors or subcontractors who are working in the defense contracts field may ascertain additional information by writing to the Board.*

"REMUNERATION"

A certain poisonous propaganda is affecting large segments of our society.

It is the belief that more dollars and less work provide an easy road to better living.

To the logical mind of the Engineer it must be obvious that the measure of good living is the availability of goods and services, not the number of dollars in circulation.

If two men are marooned on a desert island, one with two cocoanuts and the other with a million dollars, it will not be long before the price of cocoanuts reaches one million dollars per nut.

Our dollars are only a convenient means for the exchange of foods and services—bills of exchange.

It is folly for any one individual, or group, to believe that the natural law of Supply and Demand will give place to selfish interests.

PROFESSIONAL DIRECTORY

The way to better living is through the production of more and better goods. Surely any thinking person must realize that more dollars and less goods can mean only Inflation and lowered standards of living.

Engineers, trained in logical thinking, dealing daily with mathematical certainties, should take the lead in combatting false economic and social theory.

What remuneration do we expect in return for our contributions to society? If we try to measure those rewards only in dollars we are going to be disappointed, for the buying value of those dollars is beyond our control. As the various occupational groups place more emphasis on the number of dollars in the pay envelope and less and less on production, the buying power of those dollars dwindles rapidly.

Remuneration means more than dollar-income. It means the opportunity to do interesting and constructive work, honest pride of achievement, and the earned ability to live comfortably with ourselves and with each other.

In our present economy we must have dollars in return for our work. But let us not forget that the value of those dollars is controlled by the extent of the individual effort of every member of our community.

"Professional Engineer," Ont.

Engineering Societies Personnel Service, Inc.

New York Chicago Detroit San Francisco

84 East Randolph Street, Chicago 1, Ill. STate 2-2748

These items are from information furnished by the Engineering Societies Personnel Service, Inc., Chicago. This SERVICE is operated on a co-operative non-profit basis by the Illinois Society of Professional Engineers, and the national societies of Civil, Electrical, Mechanical and Mining and Metallurgical Engineers. Apply to ESPS, Chicago and the key number indicated. Prepared ENGINEERS AVAILABLE advertisements limited to 40 words, with typed resumé attached may be submitted to ESPS Chicago by members of the Illinois Society of Professional Engineers at no charge.
If placed in a position as a result of an Engineers Available or Position Available advertisement, applicants agree to pay the established placement fee. These rates are available on request and are sufficient to maintain an effective non-profit personnel service. A weekly bulletin of positions open is available to subscribers. Apply E. S. P. S., Chicago.

Over the Manager's Desk

DECEMBER, 1952

Christmas and New Years! This is the time of year that we all like to relax and think of friends. We, in E.S.P.S., also like our friends who have given us such splendid cooperation throughout the past year. Whether you are an employer or an individual applicant, we need you and we appreciate the opportunity to be of service to you.

The writer and the Chicago Staff of E.S.P.S. sincerely hope that you and yours have the most Merry Christmas you have ever had, followed by the happiest, brightest, healthiest, and most prosperous New Year of your entire career. Good luck and good wishes.

B.H.A.

MEN AVAILABLE

Chemist. Chem. 29. Two yrs. chemist to formulate or obtain coatings for paper conversion to food packaging materials. Midwest. $4800. 516-PE

Met. Engr. Met. Eng. 29. Thirteen mos. ass't metallurgist, in solutions of problems involving forging, machining, casting and some welding of low alloy, plain carbon and manganese steel. $4300. Chicago. 517-PE

Development Eng. 28. Two and one-half yrs. development of regulators, torches and old machines for new applications. Two yrs. testing thermical power plant devices. Midwest. $6000. 518-PE

Chief Engr. M.E. 53. Five yrs. consulting engr. general consulting services to various industrial plants. Fifteen yrs. admn. engr., supervision of refrigeration and motive power operations, plant layout, maintenance and installation. Midwest. $7000. 519-PE

Prod. Engr. I.E. 30. Four yrs. asst. to V. P. Prepare rotary printing specifications: cost estimates and summaries of engineering projects, schedule and expedite work. Fifteen mos. job evaluation of hourly factory jobs. $5000. Chicago. 520-PE

Factory Manager. M.E. 33. Seven yrs. assist. chief engr. of design and development of leather and synthetic rubber products. Four yrs. supervision and design of special machines. Chicago. $12,500. 521-PE

Resident Eng. C.E. 36. Five yrs. charge design of new plants, major projects. Seven mos. supervising construction of a factory. $9600. Midwest. 522-PE

Asst. to Chief Engr. M.E. 29. One yr. tool and methods engr., on oil pumps. Six mos. coordinating tool forming, punch press dept., and tool room. Three yrs. process engineer telephone equipment. $7200. Midwest. 523-PE

Field Engr. C.E. 27. Four and one-half yrs. supervising research projects in field and prepare reports, also some laboratory projects. $6000. Southwest. 524-PE

Tool Designer. 37. Nine yrs. tool and die design, detail machine design, layout of gauges, fixtures, and special tools. $6000. Chicago. 525-PE

Chemical Engr. Ch.E. 25. Three and one-half yrs. chemical engr., doing process development in adhesives and coatings. Chicago. $4000. 526-PE

Research. M.W.E.M. 43. Six yrs. field work as mining engineer, geophysicist, and geologist. Three and one-half yrs. extractive metallurgist. One yr. mine operating. Two yrs. teaching. Midwest. $6000. 527-PE

Prod. Engr. Ind. Engr. 25. Two yrs. conducting proof tests of automotive equip. Three and one-half yrs. production scheduling and control, methods, expediting and follow-up. $5500. Midwest. 528-PE

Architect. B.A.E. 25. Three and one-half years arch. struct. draftsman. Drafting, planning, layout, checking, arch. design, and sales. $6000. Chicago. 529-PE

Field Engr. 24. Four yrs. field engineer responsible for line and grade for all buildings and utilities. Midwest. $5000. 530-PE

Resident Engr. C.E. 27. One yr. as field engineer doing highway drafting and design. $5200. Midwest. 531-PE

POSITIONS AVAILABLE

Sheet Metal or Machinery Draftsmen-Designers. (3). Duties: detail and some design of sheet metal or machinery parts. Qual.: some sheet metal or machinery drafting exper. necessary. Salary: $250-$375 per mo. Loc.: Chicago. R-9440(a)

Tool Designer. Duties: design tools, dies, jigs and fixtures. Qual.: several years similar exp. Salary: $375 per mo. plus overtime compensation. Location: Chicago. R-9440(b)

General Superintendent. Coll. preferred. Age: 35-50. Ten years exp. in open pit iron ore mining, underground iron ore mining. Knowledge of iron ore beneficiation. Duties: active in the field, supervision and coordination of the activities of superintendents and department heads. For an ore mining company. Salary: $600-$900. Car required. Location: Minnesota. ONR required. T-9439

Staff Engineer. Age: 30-55. Five plus years experience in management controls. Knowledge of cost accounting or time study. Duties: staff engineer for consulting industrial engineering firm. Salary $600 per mo. Considerable traveling. Employer may negotiate fee. Loc.: Headquarters: Chicago. R-9436

Chief Industrial Engineer. College Grad. M.E. Age: 35-50. Ten yrs. exp. in manufacturing controls, operating standards, methods analysis, work simplification, time and motion studies, cost studies, training, incentive programs. Know.: of light metal manufacturing. Duties: chief industrial engineer to supervise and administer industrial engineering functions on a plant modernization program. Comp. mfrs. fasteners, screw-nuts-bolts. Salary: $10,000-$15,000 plus bonus based on profits. Location: Chicago. R-9435

Development Engineers (2). M.E. Training. Age: 28 to 40. 3-5 yrs. exp. mechanical development work, preferably along hydraulic lines. Duties: layout and design for portable hydraulically operated equipment. Housing available. Good opportunity—rapidly growing manufacturer. Salary: $5000 plus/yr. Employer will pay fee. Loc.: Ill. T-9434(a)

Draftsmen — Mechanical (4). Duties: all board work on portable hydraulic equipment. Housing available. Good opportunity with rapidly expanding manufacturer. Salary $4000 plus. Employer will pay fee. Location: Illinois. T-9434(b)

Draftsman. Age: 25-35. Two years plus exp. in drafting of special hydraulics, piping of valves. Knowledge of high pressure cartridge helpful. Duties: drafting special mechanical and hydraulic devices. For a manufacturer. Salary: $350-$400 per month. Employer will negotiate fee. Location: Chicago. R-9432

Junior Industrial Engineer. I.E. or M.E. Recent graduate or better. Duties: general industrial engineering such as time study methods, and job simplification. For a manufacturer of paints. Salary: up to $375 per month. Location: Chicago. R-9431

Director of Purchases. Age: up to 50. Five years plus exp. in charge of purchasing department to handle forgings, castings, bar stock and other machine shop products. Knowledge of Government regulations. Duties: direct purchasing department for machine shop operations. For a manufacturer. Salary: up to $750 per month. Employer may negotiate fee. Location: Chicago. R-9428